In the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

Claim 1 canceled.

2 (previously amended). The method of claim 3 wherein the breath is analyzed after a predetermined period of time.

3 (currently amended): A method for determining the ~~depth of anesthesia wherein at least one anesthetic agent~~blood level concentration of at least one agent selected from the group consisting of anesthetics, analgesics, muscle relaxants, sedatives, and anxiolytics, wherein the agent is administered into a patient's bloodstream ~~during the delivery of anesthesia~~, comprising:

sampling a patient's expired breath;

analyzing the breath for concentration of at least one substance indicative of the ~~anesthetic~~ agent using sensor technology;

determining at least one blood level concentration ~~depth of anesthesia~~ based on the concentration of at least one substance indicative of the at least one agent; and

using a flow sensor to detect starting and completion of exhalation during said sampling step.

4 (currently amended): The method of claim 3 further comprising the step of controlling an infusion pump for delivering the agent intravenously based on the ~~depth of anesthesia~~ determined blood level concentration.

5 (currently amended). The method of claim 3 wherein the agent is delivered by a delivery method selected from the group comprising: intravenous continuous delivery, parenteral delivery, sublingual delivery, transdermal delivery, and ~~i.v.~~intravenous bolus delivery.

6 (previously amended). The method of claim 3 wherein the agent is delivered by continuous infusion.

7 (previously amended). The method of claim 3 wherein the agent is delivered by an infusion pump.

8 (previously amended). The method of claim 3 wherein the agent is selected from the group comprising Remifentanil and Propofol.

9 (previously amended). The method of claim 3 wherein the steps are repeated periodically to monitor trending over time.

10 (previously amended). The method of claim 3 wherein the agent is for amnesia.

11 (previously amended). The method of claim 3 wherein the agent is for analgesia.

12 (previously amended). The method of claim 3 wherein the agent is for muscle relaxation.

13 (previously amended). The method of claim 3 wherein the agent is for sedation.

14 (previously amended). The method of claim 3 wherein a combination of agents is administered.

15 (currently amended). The method of claim 3 wherein the determined blood level concentration is measured to determine anesthetic blood concentration.

16 (currently amended). The method of claim 3 wherein the determined blood level concentration is measured to determine analgesic blood concentration.

17 (currently amended). The method of claim 3 wherein the determined blood level concentration is measured for a level indicative of recovery.

18 (previously amended). The method of claim 3 wherein the sampling is continuous.

19 (previously amended). The method of claim 3 wherein the sampling is periodic.

20 (previously amended). The method of claim 3 wherein the patient's breath is analyzed by sensor technology selected from semiconductor gas sensor technology, conductive polymer gas sensor technology, or surface acoustic wave gas sensor technology.

21 (original). The method of claim 20 wherein the sensor technology produces a unique electronic fingerprint to characterize the concentration of said at least one substance.

22 (previously amended). The method of claim 3 further comprising the step of recording data resulting from analysis of the patient's breath.

23 (previously amended). The method of claim 3 further comprising the step of transmitting data resulting from analysis of the patient's breath.

24 (previously amended). The method of claim 3 wherein the analysis of the patient's breath includes comparing the substance sensed in the patient's breath with a predetermined signature profile.

25 (previously amended). The method of claim 3 further comprising the step of capturing the patient's breath in a vessel prior to analysis.

26 (previously amended). The method of claim 3 further comprising the step of dehumidifying the patient's breath prior to analyzing.

27 (previously amended). The method of claim 3 wherein said analysis further includes detecting exhalation of the patient's breath with a sensor.

28 (currently amended). The method of claim 3 wherein said substance indicative of the ~~anesthetic~~ agent is free ~~anesthetic~~ agent.

29 (currently amended). The method of claim 3 wherein said substance indicative of the ~~anesthetic~~ agent is metabolites of the ~~anesthetic~~ agent.

30 (currently amended). The method of claim 3 wherein said substance indicative of the ~~anesthetic~~ agent is free ~~anesthetic~~ agent and metabolites of the ~~anesthetic~~ agent.

31 (currently amended). The method of claim 3 further comprising the step of assigning a numerical value to the concentration of at least one substance indicative of the agent as analyzed upon reaching a level of ~~anesthetic~~pharmacological effect in said patient and, thereafter, assigning higher or lower values to the concentration based on its relative changes.

32 (currently amended). The method of claim 31 further comprising monitoring the concentration of at least one substance indicative of the agent by monitoring changes in said value and adjusting administration of ~~anesthesia~~said agent to maintain a desired ~~anesthetic~~pharmacological effect.

33 (currently amended). A method for monitoring endogenous compounds in a patient, comprising:

sampling a patient's expired breath;

analyzing the breath for concentration of endogenous compounds using sensor technology; and

calculating the concentration of endogenous compounds, wherein the endogenous compounds are selected from hydrocarbons, alcohols, ~~ketones,~~ glucose, electrolytes, or oxygenated, chlorinated, or nitrogenated organic chemical compounds.

34 (currently amended). The method of claim 33 wherein the endogenous compounds are selected from glucose~~, ketones,~~ or electrolytes.

35 (original). An anesthetic agent delivery system for delivering a desired dose of anesthetic agent to a patient comprising:

an anesthetic supply having a controller for controlling the amount of anesthetic agent provided by the supply;

a breath analyzer for analyzing the patient's breath for concentration of at least one substance indicative of the anesthetic agent concentration in the patient's bloodstream that provides a signal to indicate the anesthetic agent concentration delivered to the patient; and

a system controller connected to the anesthetic supply which receives the signal and controls the amount of anesthetic agent based on the signal.

36 (original). The system of claim 35 wherein the breath analyzer comprises a collector for sampling the patient's expired breath, a sensor for analyzing the breath for concentration of at least one substance indicative of the anesthetic agent concentration, a processor for calculating the effect of the agent based on the concentration and determining depth of anesthesia.

37 (original). The system of claim 36 wherein the sensor is selected from semiconductor gas sensor technology, conductive polymer gas sensor technology, or surface acoustic wave gas sensor technology.

38 (currently amended). An apparatus for administering intravenous anesthesia to a patient comprising:

at least one supply of at least one intravenous anesthesia agent;

intravenous delivery means for controllably intravenously delivering said at least one intravenous anesthesia agent to the patent;

a breath analyzer for analyzing the patient's breath for concentration of at least one substance indicative of the anesthetic agent in the patient's bloodstream ~~that provides~~ and providing a signal to indicate the anesthetic agent concentration delivered to the patient; and

a system controller connected to the intravenous delivery means which receives the signal and controls the amount of anesthetic agent based on the signal.

39 (original). A method for monitoring perflubron levels in an anemic patient, comprising:

(i) sampling a patient's breath;

(ii) analyzing the breath for concentration of perflubron using sensor technology; and

(iii) calculating the blood concentration of perflubron based on the concentration.

40 (currently amended). The method of claim 33 wherein the endogenous compound is ~~s are acetone or~~ ammonia.